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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/784,223	02/16/2001	John G. Apostolopoulos	10007798-1	2552

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EXAMINER

NGUYEN, VAN KIM T

ART UNIT PAPER NUMBER

2151

DATE MAILED: 12/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/784,223

Applicant(s)

APOSTOLOPOULOS, JOHN G.

Examiner

Van Kim T. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is responsive to communications filed on September 13, 2005.

Claims 1-20 are pending in the case.

Applicant's arguments, see page 9, filed September 13, 2005, with respect to claims 1-7, 12-13, and 15-17 have been fully considered and are persuasive. The objection of claims 1-7, 12-13, and 15-17 has been withdrawn.

Applicant's arguments with respect to claims 5-7, 9-10, and 19-20 have been considered but are moot in view of the new grounds of rejection.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Apostolopoulos ("Error-resilient video compression", Multimedia Systems and Application II, Proceeding of SPIE Vol. 3845, pages 180-191, September 1999), in view of Jinzaki et al (US 2001/0009547), hereinafter Jinzaki.

Regarding claims 1, 8, and 18, as shown in Figure 1, Apostolopoulos discloses a method of communicating video from a sender to a receiver over a network comprising the steps of:

receiving a frame; determining if the received frame is from a first sub-sequence of frames; when the frame is from a first sub-sequence of frames, encoding the frame, packetizing the frame into at least a packet, and sending the packet via a first path; and

otherwise, when the frame is from a second sub-sequence of frames and not from a first

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sub-sequence of frames, encoding the frame, packetizing the frame into at least a packet, and sending the packet via a second path (Sect. 4: Novel Approach: Multiple State Streams, esp. Sect. 4.1 Encoder Portion of System, pages 186-187, e.g., input video is partitioned into two subsequences of frames, even and odd, encoded (packetized) them independently, and transmitted them on diverse/multiple paths).

Apostolopoulos discloses substantially all the claimed limitations, except the second path in the network including a relay device not on the first path.

As shown in Figure 10, Jinzaki discloses a data communication system with different communications delay (para 0076).

Apostolopoulos and Jinzaki teach analogous arts, relating to the transmission of data, thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize Jinzaki's method of transmitting data with different communication delay in Apostolopoulos' system, motivated by the need of transmitting data at a specific transfer rate and with a specific transfer delay.

Regarding claim 2, the combination of Apostolopoulos and Jinzaki also discloses the first sub-sequence and second sub-sequence are selected based on time or space (Apostolopoulos: Sect. 4.1 Encoder Portion of System, page 187, lines 4-8).

Regarding claims 3-4, the combination of Apostolopoulos and Jinzaki also discloses determining if the frame is an odd frame or an even frame (Apostolopoulos: Sect. 4.1 Encoder Portion of System, pages 186: lines 28-29). Though Apostolopoulos does not explicitly disclose

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including a label for identifying whether the packet is an odd or even frame, using a packetized elementary streams (PES) header to identify the type of stream is a feature well known in the art.

Regarding claims 5-7, 9-10, and 19-20, the combination of Apostolopoulos and Jinzaki also discloses determining if a packet is from a first sub-sequence; when the packet is from a first sub-sequence, decoding the packet; determining if there is an error in the packet; when there is an error, determining if a reduce frame rate is acceptable; when a reduce frame rate is acceptable, displaying the video at a reduced frame rate by employing frames from the second sub-sequence; when a reduced frame rate is not acceptable, performing state recovery on first frame by employing one of a previous frame and a future frame from one of the first sub-sequence and the second sub-sequence (Apostolopoulos: Section 4.1- Sect. 4.2: Encoder Portion of System; and Decoder Portion of System).

Regarding claims 14-16, the combination of Apostolopoulos and Jinzaki also discloses receiving at least one path quality parameter (errors); and in response to the path quality parameter dynamically modifying at least one communication parameter including the number of paths and path configuration (e.g., multiple bitstreams,), bandwidth (e.g., bit rates), packet loss rate (e.g., intelligent discarding of data), delay, and quality of service (Apostolopoulos: Sect. 3.2: Approaches to Overcome these Problems, pages 182-185, esp. page 184: lines 27-31, 44-46,).

Regarding claim 17, the combination of Apostolopoulos and Jinzaki also discloses number of paths is dynamically modified to be one path and the number of states is dynamically

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modified to be one state (e.g., error can be limited to a single frame, Apostolopoulos: page 183: lines 29-30).

Regarding claims 11-12, the combination of Apostolopoulos and Jinzaki also discloses receiving at least one path quality parameter through a feedback link with the receiver and in response to the path quality parameter dynamically modifying at least one video encoding parameter (Apostolopoulos: pages 183- 184: Back Channel Between Decoder and Encoder; Layer of Scalable approaches; and Multiple Description Coding).

Regarding claim 13, the combination of Apostolopoulos and Jinzaki also discloses the video encoding parameter includes quantization, frame rate, and spatial resolution of the encoding (Apostolopoulos: page 185, Sect. 3.4 Current Error-resilient Video Compression Standards).

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Van Kim T. Nguyen whose telephone number is 571-272-3073. The examiner can normally be reached on 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zarni Maung, can be reached on 571-272-3939. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Van Kim T. Nguyen

Examiner

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